

REMARKS

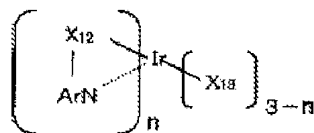
Claims 1-10 are pending in this application. The claims have not been amended by this paper.

Rejections under 35 U.S.C. § 103(a)

The Office Action rejects claims 1-6 and 8-10 under 35 U.S.C. §103(a) as being unpatentable over JP 2003-007467 A (hereinafter 'Tsuge') in view of U.S. Application Publication No. 2004/0076853 (hereinafter 'Jarikov').

Claim 1 recites: a "light-emitting device, comprising at least a substrate (1), an anode (2), a light-emitting layer (4) and a cathode (6), wherein the light-emitting layer (4) includes an iridium complex IrL₃ and wherein at least two ligands L are a dibenzoquinoline."

In support of the rejection, the Office Action has cited one of the claims of Tsuge, which states that a dopant in a luminous layer can be composed of a compound having the following general formula:



However, as the Office has recognized, "[t]he fact that a claimed compound may be encompassed by a disclosed generic formula does not by itself render that compound obvious." *In re Baird*, 16 F.3d 380, 382 (Fed. Cir. 1994). See also MPEP §2144.08(II). To provide the further basis required to establish the asserted *prima facie* obviousness of claim 1, the Office Action notes that the claimed dibenzoquinoline compounds and the benzoquinoline compounds

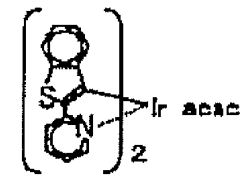
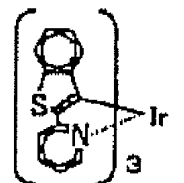
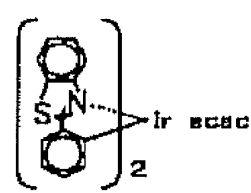
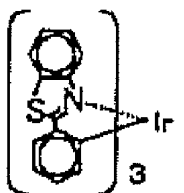
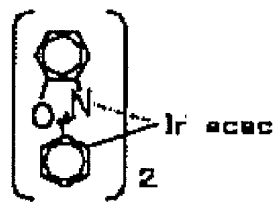
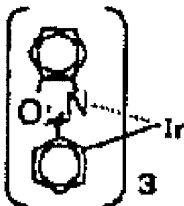
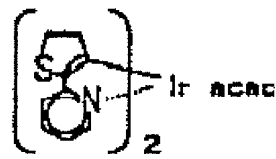
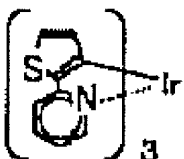
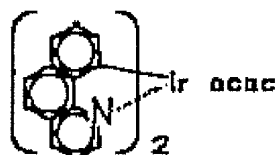
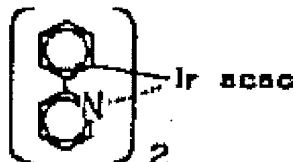
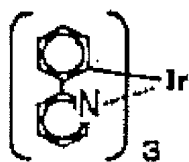
disclosed in Tsuge are homologs and that Tsuge discloses the possibility of producing fused homologs in formulas 48 and 50, reproduced herein below, respectively:



While the Examiner has presented a clever argument when viewed in isolation, it should be noted that “when ‘all of the disclosures in a reference’ are considered, the overall suggestion to emerge from the prior art reference may be contrary to that which might appear from an isolated portion of the reference.” *In re Langer*, 465 F.2d 896, 899 (CCPA 1972). Moreover, “homology should not be automatically equated with prima facie obviousness,” as the prior art as a whole must be compared with the claimed subject matter as a whole. *Id.* at 898-899.

It is respectfully submitted that when the cited reference is viewed as a whole, the overall suggestion of the reference runs contrary to the use of dibenzoquinoline as ligands of an iridium complex. For example, it should first be noted that Tsuge, as discussed in the Amendment submitted on May 5, 2010, is primarily directed to addressing uneven distribution of a host agent toward the cathode side of a device during operation (Tsuge, para. 7). In particular, Tsuge provides only a very short description of doping agents that can be used in an electroluminescent device.

Where Tsuge does describe doping agents, Tsuge mentions the following general formulas of the doping agents that can be used:



Each of the variations provided by Tsuge reveals a consistent pattern of dopants in which, at most, only one ring is added to the base 2-phenyl-pyridine. Thus, in view of the teachings of Tsuge as a whole, one of ordinary skill in the art would at best search for variations of the base 2-phenyl-pyridine that have only one additional aromatic ring. Tsuge does not in any way

suggest adding more than one ring to the base 2-phenyl-pyridine to synthesize an iridium complex with dibenzoquinoline ligands, as claimed.

Accordingly, it is respectfully submitted that it would not be obvious in view of Tsuge as a whole to employ dibenzoquinoline ligands in an iridium complex for several reasons. First, Tsuge is primarily directed to problems associated with a host agent and provides only a minimal description with regard to iridium complexes used in a dopant. Thus, any reference to Tsuge for teachings on iridium complexes by one of ordinary skill in the art is relatively unlikely. Second, Tsuge teaches the use of iridium complex dopants in which only one ring is added to the base 2-phenyl-pyridine, whereas the claimed complex employs dibenzoquinoline ligands with at least four rings. Third, Tsuge's brief description of iridium complexes does not in any way suggest any reason for diverting from the disclosed pattern of dopants to add more than one ring to the base 2-phenyl-pyridine. As such, it is respectfully submitted that it would not be obvious to modify the iridium complex dopant of Tsuge to produce an iridium complex with dibenzoquinoline ligands, as recited in claim 1.

Furthermore, with regard to the mention of Jarikov in the Office Action, the Examiner has recognized, in view of the Applicant's arguments, that a host serves an entirely different function than dopants of a luminous layer of an organic electroluminescent device (see, e.g., Final Office Action, p. 5, para. 2). Specifically, the doping agent functions as a phosphorescence emitter while the host agent acts as an exciton that excites the doping agent, thereby inducing phosphorescent emission (see Tsuge, paras. 6 and 17). Thus, despite Jarikov's disclosure of utilizing dibenzoquinolines as a host material in organic EL devices, it is respectfully submitted that Jarikov provides no teaching or suggestion whatsoever for employing dibenzoquinolines in a dopant. Indeed, if Jarikov should be combined with Tsuge, Jarikov's description of employing

dibenzoquinoline as a host would at best teach away from using dibenzoquinoline in the dopant of Tsuge. As such, it would not be obvious to use dibenzoquinolines in the iridium complex dopant described in Tsuge in view of Jarikov.

Therefore, the Applicant respectfully requests the withdrawal of the rejection of claim 1 for at least the reasons discussed above. Similarly, it is also respectfully submitted that the cited references fail to disclose or render obvious claims 2-6 due at least to their dependencies from claim 1.

With regard to claim 8, claim 8 also recites an iridium complex IrL_3 in which at least two ligands L are dibenzoquinolines. As discussed above, neither reference, taken singly or in combination, discloses the use of such an iridium complex nor is it obvious to devise such an iridium complex in view of the references. As such, the cited references do not render claim 8 unpatentable. Similarly, claims 9 and 10 are also patentable over the cited references due at least to their dependencies from claim 8. Thus, withdrawal of the rejection and allowance of the claims is respectfully requested.


CONCLUSION

In view of the foregoing amendments and remarks, this application should now be in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes that the application is not in condition for allowance, the Examiner is requested to call the Applicants' representative at the telephone number indicated below to discuss any outstanding issues relating to the allowability of the application.

It is believed that no additional fees or charges are currently due. However, in the event that any additional fees or charges are required at this time in connection with the application, they may be charged to applicant's representatives Deposit Account No. 14-1270.

Respectfully submitted,

Dated: 9-27-10

By 
David Zivan, Esq.
Registration No.: 59,159

Dated: 9-28-10

By /R.J. KRAUS/
Robert J. Kraus, Esq.
Registration No.: 26,358

Philips Intellectual Property & Standards
345 Scarborough Road
Briarcliff Manor, NY 10510-8001
Telephone No. (914) 333-9634